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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,945	08/01/2003	Ted J. Cooper	T08012003	4972
7590	09/12/2005		EXAMINER ZHU, JOHN X	
Ted J. Cooper 746 Silver Tip Way Sunnyvale, CA 94086			ART UNIT 2858	PAPER NUMBER

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/632,945

Applicant(s)

COOPER ET AL.

Examiner

John Zhu

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,9-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,9-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 9, 10, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornog et al. (6,501,197 B1) in view of Applicant's Admitted Prior Art (Hereinafter AAPA).

With respect to claims 1, 9 and 23, Cornog discloses a first group of battery cells (Fig. 7, element 11a) electronically connected and securely held together in a battery pack (Fig. 1, element 10) connected to other battery packs (Fig. 2, elements 23) via first removable connector (Fig. 2, elements 27) and a second connector (Fig. 2, element 14) removably connected to a tool.

Cornog does not disclose the second connector coupled to an electronic speed controller, which is coupled to the motor of a remote control model.

AAPA (Fig. 1) discloses a connector (ESC Connector) coupled to an electronic speed controller, which is coupled to the motor of a remote control model.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the battery reconfiguration system of Cornog and the connector as taught by AAPA for the purpose of providing a

sufficient battery system that will generate required output voltage and current (Cornog, column 2, lines 27-28) in a remote control model.

With respect to claims 2 and 10, the first and second connectors as taught by Cornog are indeed different standard connectors with the first being jumper cable connectors (Column 3, line 2) and the latter being a standard tool connector (Fig. 3, element 14).

With respect to claim 24, Cornog further discloses that it is possible to reconfigure the battery packs in fig. 2 to desirable parallel and series configurations. Although Cornog does not explicitly disclose decoupling the group of battery cells from each other and the electronic speed controller, it is necessary to disconnect the second connector (Fig. 2, element 14) and disconnect unwanted first connectors (Fig. 2, element 27) and utilize the second connector with desired arrangement of battery packs to supply the motor with power. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the reconfiguration system as taught by Cornog for the same purpose of providing sufficient battery system that will generate required output voltage and current (Cornog, column 2, lines 27-28)

3. Claims 3, 4, 11, 13, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornog et al. (6,501,197 B1) in view of AAPA as applied to claim 1 above, and further in view of Suppanz et al. (6,014,013).

With respect to claims 3, 4, 11 and 13, Cornog and AAPA disclose aspects of the claims except a first wire and second wire directly coupled to the terminals of a battery cell in the first and second group of battery cells respectively able charging from a battery charger, nor a first and second integrated circuit coupled together where the signal from the first integrated circuit via control line to the second integrated circuit controls the charging of a particular battery cell.

Suppanz discloses a first wire (Charger wire, fig. 1) directly coupled to the first terminal of a battery cell and a second wire directly coupled to a second terminal of a second battery cell. Suppanz further discloses a first integrated circuit (Microprocessor, fig. 1, element 40) connected to a second integrated circuit (Bypass Module, fig. 1, element 32/Column 2, lines 60-63) via control lines to control (Bypass or charge) the charging of a particular group of battery cells.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the wires and integrated circuits as taught by Suppanz into the system of Cornog and AAPA for the purpose of managing and charging batteries.

With respect to claim 14, Cornog and AAPA do not disclose a second control signal transmitted from the first integrated circuit to the second integrated circuit to control charging operation for a second battery cell. Suppanz discloses second signals (other control signals) to control various charging of other battery cells (Column 2, lines 36-43). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the secondary control signals as taught by Suppanz into the system of Cornog and AAPA for the purpose of charging secondary battery cells.

With respect to claim 15, Cornog, AAPA and Suppanz do not explicitly disclose placing the second integrated circuit inside the first group of battery cells. However, rearrangement of parts by positioning the second integrated circuit inside the first group of battery cells is not patentably distinct unless it could be shown to produce unexpected or new results. See *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cornog, AAPA and Suppanz by rearranging the integrated circuit inside the first group of battery cells for the purpose of space and size constraints.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cornog et al. (6,501,197 B1) in view of AAPA and Suppanz et al. (6,014,013) as applied to claim 11 above, and further in view of Chabbert et al. (5,644,209).

With respect to claim 12, Cornog, AAPA and Suppanz do not disclose the charging operation comprises discharging the particular battery cell.

Chabbert discloses charging operation comprising discharging (Fig. 1/Column 1, lines 61-63) selected individual batteries.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the discharge aspect of a charging system as taught by Chabbert into the system of Cornog, AAPA and Suppanz for the purpose of dynamically balancing the charge stored in the individual cells.

5. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornog et al. (6,501,197 B1) in view of AAPA and Jakubowski (6,548,986 B1).

With respect to claims 16 and 17, Cornog and AAPA discloses aspects of the claim including first group of battery cells, second group of battery cells and connect to a ESC which is connect to a RC motor.

Cornog and AAPA do not disclose the first group and second group of battery cells removably coupled via a first connector and second connector respectively to an ESC, nor the first and second connectors connecting to the same device being different standard connectors.

Jakubowski discloses a first power means (Wall transformer, fig. 7, element 61) with a first connector (Wall transformer connector, fig. 7, element 65) that connects to a device (Electrical appliance, fig. 7, element 73), and second power means (Back battery, fig. 7, element 67) with a second connector (Backup wall connect, fig. 7, element 69) that is connected to the same device (Electrical appliance, fig. 7, element 73).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the system as taught by Jakubowski with

two separate power means connected to the same device utilizing difference connectors into the system of Cornog and AAPA for the purpose of providing backup power to the system.

6. Claims 18, 20, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornog et al. (6,501,197 B1) in view of AAPA and Jakubowski (6,548,986 B1) as applied to claim 16 above, and further in view of Suppanz et al. (6,014,013).

With respect to claims 18 and 20, Cornog, AAPA and Jakubowski do not disclose a first wire and second wire directly coupled to the terminals of a battery cell in the first and second group of battery cells respectively allowing charging from a batter charger. They also do not disclose a first and second integrated circuit coupled together where the signal from the first integrated circuit via control line to the second integrated circuit controls the charging of a particular battery cell.

Suppanz discloses a first wire (Charger wire, fig. 1) directly coupled to the first terminal of a battery cell and a second wire directly coupled to a second terminal of a second battery cell. Suppanz further discloses a first integrated circuit (Microprocessor, fig. 1, element 40) connected to a second integrated circuit (Bypass Module, fig. 1, element 32/Column 2, lines 60-63) via control lines to control (Bypass or charge) the charging of a particular group of battery cells.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the wires and integrated circuits as taught

by Suppanz into the system of Cornog, AAPA and Jakubowski for the purpose of managing and charging batteries.

With respect to claim 21, Cornog, AAPA and Jakubowski do not disclose a second control signal transmitted from the first integrated circuit to the second integrated circuit to control charging operation for a second battery cell. Suppanz discloses second signals (other control signals) to control various charging of other battery cells (Column 2, lines 36-43). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the secondary control signals as taught by Suppanz into the system of Cornog, AAPA and Jakubowski for the purpose of charging secondary battery cells.

With respect to claim 22, the Cornog, AAPA, Jakubowski and Suppanz do not explicitly disclose placing the second integrated circuit inside the first group of battery cells. However, rearrangement of parts by positioning the second integrated circuit inside the first group of battery cells is not patentably distinct unless it could be shown to produce unexpected or new results. See *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cornog, AAPA, Jakubowski and Suppanz by rearranging the integrated circuit inside the first group of battery cells for the purpose of space and size constraints.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cornog et al. (6,501,197 B1) in view of AAPA, Jakubowski (6,548,986 B1) and Suppanz et al. (6,014,013) as applied to claim 18 above, and further in view of Chabbert et al. (5,644,209).

With respect to claim 19, Cornog, AAPA, Jakubowski and Suppanz do not disclose the charging operation comprises discharging.

However, it is well known in the art to discharge as well as charge in a charging system. For example, Chabbert discloses a charge and discharge circuit that performs the operations on selected individual batteries.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the discharge aspect of a charging system as taught by Chabbert into the system of Cornog, AAPA, Jakubowski and Suppanz for the purpose of dynamically balancing the charge stored in the individual cells.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gordin (5,308,717) discloses a battery jig that provides simple and fast reconfiguration in a RC car competition. Eaves (5,656,915) discloses a charging and discharging system for individual cells controlled by microprocessor and switching circuitry. Spotnitz (6,106,971) discloses a battery reconfiguration system for a power tool.

Response to Arguments

9. In response to applicant's argument that the references provided do not disclose or suggest all elements in claims and subsequent amended claims, examiner has provided and applied new art. More specifically, primary reference Cornog et al. (6,501,197 B1) discloses removable and changeable electrical connections between battery packs that allow the user reconfigure as necessary. In addition, with other references provided, it would be seen that the concept of rearranging and reconfiguring batteries in different environments, including the RC competition arena, to meet different needs is quite common.


10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

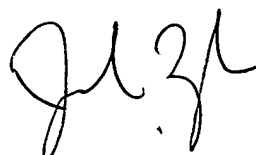
Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Zhu whose telephone number is (571) 272-5920. The examiner can normally be reached on M-F, 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ANJAN DEB
PRIMARY EXAMINER

John Zhu
Examiner
Art Unit 2858



JZ